

## CLAIMS

What is claimed is:

1. A method of authentication with respect to an electronic document stored on a computer network comprising the steps of:
  - 5 identifying an electronic address associated with the electronic document;
  - identifying a geographic location associated with the electronic document;
  - authenticating the geographic location;
  - 10 creating an authenticated digital certificate comprising the authenticated geographic location; and
  - storing the authenticated digital certificate in an authenticated digital certificate database.
2. The method of Claim 1 wherein the electronic address is a URL.
- 15 3. The method of Claim 1 wherein the step of authenticating comprises:
  - matching the identified geographic location to a known geographic location using automated search techniques.
4. The method of Claim 1 wherein the step of authenticating comprises:
  - 20 matching the identified geographic location to a known geographic location using manual search techniques.
5. The method of Claim 1 further comprising the step of storing the authenticated digital certificate within the electronic document.

6. The method of Claim 5 wherein the authenticated digital certificate is stored as a metatag within the electronic document.
7. The method of Claim 1 further comprising the step of storing the authenticated digital certificate as a file.
- 5 8. The method of Claim 1 further comprising the step of storing the authenticated digital certificate as a signed digital certificate.
9. The method of Claim 1 wherein the geographic location is a physical street address.
- 10 10. The method of Claim 1 wherein the geographic location is a physical street address of a server computer where the electronic document is stored.
11. The method of Claim 1 wherein the authenticated digital certificate is associated with a plurality of electronic documents stored in a hierarchical tree structure.
12. The method of Claim 1 wherein the authenticated digital certificate is associated with a plurality of geographic locations.
- 15 13. The method of Claim 1 wherein the step of identifying the electronic address associated with the electronic document comprises creating the electronic document address.
14. A method of improved searching for electronic documents on a computer network comprising the steps of:  
20 providing a geographic location to a query interface;

searching for electronic documents within an authenticated digital  
certificate database that match the geographic location; and  
returning an authenticated set of electronic document addresses.

15. The method of Claim 14 further  
5        providing a keyword to the query interface; and  
      matching the keyword when searching for electronic documents.
16. The method of Claim 14 wherein the query interface is implemented as a Web  
browser plug-in.
17. The method of Claim 14 wherein the step of searching is triggered by the  
10       geographic location provided to the query interface.
18. The method of Claim 15 wherein the searching step further comprises limiting  
the authenticated set of electronic document addresses to those within a  
predefined proximity of the geographic location.
19. The method of Claim 18 wherein the predefined proximity is automatically  
15       generated based upon the keyword.
20. The method of Claim 18 wherein the predefined proximity is automatically  
adjusted based upon the authenticated set of electronic document addresses  
returned.
21. The method of Claim 14 wherein the step of returning an authenticated set of  
20       electronic document addresses further comprises creating at least one electronic  
document associated with the set of electronic document addresses.

22. A method of improved searching for electronic documents on a computer network comprising the steps of:
- parsing a keyword query;
  - determining that a geographic search is indicated based upon the
  - 5 identification of geographic terms in the keyword query;
  - performing a keyword search on an index of the electronic documents;
  - and
  - performing a geographic search on records in an authenticated digital certificate database.
- 10 23. The method of Claim 22 wherein geographic terms are removed from the keyword query prior to performing the keyword search.
24. The method of Claim 22 further comprising the step of
- comparing the results of the keyword search with the results of the geographic search.
- 15 25. The method of Claim 24 further comprising the step of
- removing electronic documents from the results of the keyword search that do not match a record in the authenticated digital certificate database.
26. The method of Claim 24 further comprising the step of
- visually identifying electronic documents from the results of the keyword
  - 20 search that match a record in the authenticated digital certificate database.
27. The method of Claim 22 further comprising the step of
- displaying the results of the keyword search in a window; and
  - displaying the results of the geographic search including a non-geographic keyword in a separate window.

28. The method of Claim 22 wherein the searching is performed using a Web browser capable of switching on and off the step of determining that a geographic search is indicated.
29. The method of Claim 22 wherein the step of performing a geographic search  
5 further comprises limiting the authenticated set of electronic document addresses to those within a predefined proximity of the geographic location.
30. The method of Claim 29 wherein the predefined proximity is automatically generated based upon the keyword query.
31. The method of Claim 29 wherein the predefined proximity is automatically  
10 adjusted based upon the results of the geographic search.
32. The method of Claim 22 wherein the step of performing a geographic search on records in an authenticated digital certificate database further comprises creating at least one electronic document.
33. A method for displaying an authenticated digital certificate associated with an  
15 electronic document on a computer comprising the steps of:  
    presenting, in a structured format, an electronic address associated with the authenticated digital certificate; and  
    displaying a representation of the authenticated digital certificate based upon selection of the electronic address.
- 20 34. The method of Claim 33 wherein the structured format is a map.
35. A method for verifying the integrity of a stored authenticated digital certificate comprising the steps of:

obtaining an electronic document address from the stored authenticated digital certificate; and

establishing the existence of an electronic document associated with the electronic document address.

- 5    36.    The method of Claim 35 further comprising the step of verifying that a geographic location stored in the authenticated digital certificate matches a geographic location stored in the electronic document.
37.    A memory for storing data for access by an application program being executed on a data processing system, comprising:
- 10            a data structure stored in said memory, said data structure including:  
a plurality of data objects stored in said memory, each of said data objects containing:
- a header for identifying the data structure as an authenticated digital certificate comprising at least a geographic location associated with the
- 15            electronic document; and
- a set of basic attributes associated with the electronic document comprising at least one of a certificate ID, a name, a Uniform Resource Locator and the geographic location.
38.    The memory of Claim 37 said data objects further containing:
- 20            a set of extended attributes associated with the electronic document comprising at least one of a business category, business description and a keyword.
39.    An apparatus authenticating an electronic document stored on a computer network comprising:

an electronic document associated with an electronic address and a geographic location;

an authentication unit authenticating the geographic location;

an authenticated digital certificate comprising the electronic address and the authenticated geographic location; and

an authenticated digital certificate database storing the authenticated digital certificate.

40. An apparatus providing improved searching of electronic documents on a computer network comprising:

a query interface providing for input of a geographic location;

an authenticated digital certificate database providing searching for electronic documents that match the geographic location; and

an authenticated set of electronic document addresses returned from the authenticated digital certificate database.

41. The apparatus of Claim 40 wherein the input further comprises

a non-geographic keyword; and

a unit for matching the keyword when searching for electronic documents.

42. An apparatus providing improved searching of electronic documents on a computer network comprising:

an input unit parsing a keyword query;

a logic unit determining that a geographic search is indicated based upon the identification of geographic terms in the keyword query; and

a searching unit performing a keyword search on an index of the electronic documents and a geographic search on records in an authenticated digital certificate database.

43. An apparatus for displaying an authenticated digital certificate associated with an electronic document on a computer comprising:
- an electronic address associated with the authenticated digital certificate, presented in a structured format, and
  - 5 a representation of the authenticated digital certificate displayable based upon selection of the electronic address.
44. An apparatus verifying the integrity of a stored authenticated digital certificate comprising:
- an electronic document address obtained from the stored authenticated
  - 10 digital certificate; and
  - a verification unit establishing the existence of an electronic document associated with the electronic document address.
45. An apparatus providing authentication with respect to an electronic document stored on a computer network comprising:
- 15 a means for identifying an electronic address associated with the electronic document;
  - a means for identifying a geographic location associated with the electronic document;
  - a means for authenticating the geographic location;
  - 20 a means for creating an authenticated digital certificate comprising the authenticated geographic location; and
  - a means for storing the authenticated digital certificate in an authenticated digital certificate database.
46. An apparatus providing improved searching for electronic documents on a
- 25 computer network comprising:
  - a query interface for providing input of a geographic location;



a means for searching for electronic documents within an authenticated digital certificate database that match the geographic location; and

a means for returning an authenticated set of electronic document addresses.

- 5    47.    The apparatus of Claim 46 wherein the input further comprises  
         a non-geographic keyword; and  
         a means for matching the non-geographic keyword when searching for  
electronic documents.
48.    An apparatus providing improved searching for electronic documents on a  
10    computer network comprising:  
         a means for parsing a keyword query;  
         a means for determining that an attribute search is indicated;  
         a means for performing a keyword search on an index of the electronic  
documents; and  
15           a means for performing a geographic search on records in an  
authenticated digital certificate database.
49.    An apparatus for displaying an authenticated digital certificate associated with  
an electronic document on a computer comprising:  
         a means for presenting, in a structured format, an electronic address  
20    associated with the authenticated digital certificate; and  
         a means for displaying a representation of the authenticated digital  
certificate based upon selection of the electronic address.
50.    An apparatus verifying the integrity of a stored authenticated digital certificate  
comprising:

a means for obtaining an electronic document address from the stored authenticated digital certificate; and

a means for establishing the existence of an electronic document associated with the electronic document address.

5 51. A computer program product comprising:

a computer usable medium providing authentication with respect to an electronic document stored on a computer network;

a set of computer program instructions embodied on the computer usable medium, including instructions to:

10 identify an electronic address associated with the electronic document;

identify a geographic location associated with the electronic document;

authenticate the geographic location;

create an authenticated digital certificate comprising the authenticated geographic location; and

15 store the authenticated digital certificate in an authenticated digital certificate database.

52. A computer program product comprising:

20 a computer usable medium providing improved searching for electronic documents on a computer network;

a set of computer program instructions embodied on the computer usable medium, including instructions to:

provide a geographic location to a query interface;

provide a keyword to the query interface;

25 search for electronic documents within an authenticated digital certificate database that match the geographic location; and

return an authenticated set of electronic document addresses.

53. The computer program of Claim 52 further including instructions to:  
provide a keyword to the query interface; and  
matching the keyword when searching for electronic documents.
54. A computer program product comprising:  
5 a computer usable medium providing improved searching for electronic documents on a computer network;  
a set of computer program instructions embodied on the computer usable medium, including instructions to:  
parse a keyword query;  
10 determine that a geographic search is indicated based upon the identification of geographic terms in the keyword query;  
perform a keyword search on an index of the electronic documents; and  
perform a geographic search on records in an authenticated digital certificate database.
- 15 55. A computer program product comprising:  
a computer usable medium providing improved viewing of an electronic document on a computer network;  
a set of computer program instructions embodied on the computer usable medium, including instructions to:  
20 present, in a structured format, an electronic address associated with the authenticated digital certificate; and  
display a representation of the authenticated digital certificate based upon selection of the electronic address.
56. A computer program product comprising:  
25 a computer usable medium verifying the integrity of a stored authenticated digital certificate;

a set of computer program instructions embodied on the computer usable medium, including instructions to:

obtain an electronic document address from the stored authenticated digital certificate; and

- 5           establish the existence of an electronic document associated with the electronic document address.